transmits frame synchronization word, e.g., pilot patterns of the preferred embodiment, and the period for synchronization is one frame. In chip synchronization, a scrambling code comprises chips, and chip synchronization indicates synchronization of the scrambling code, where chip is a smaller unit of signal than data symbol. Generally, multiple chips comprise one symbol. Since the minimum unit of data is a symbol, chip by itself does not contain any information, but scrambling code used to scramble the data symbols.

There are two types of scrambling codes, i.e., a short scrambling code with a duration of one symbol and a long scrambling code with a duration of one frame. When a long scrambling code is used, frame synchronization is equivalent to chip synchronization, i.e, when there is frame synchronization, there is chip synchronization or vice versa. As for short scrambling code, frame synchronization is not equivalent to chip synchronization since there can be chip synchronization without frame synchronization. However, when frame synchronization is accomplished, there is also chip synchronization for short scrambling code. In the preferred embodiment, either short or long scrambling code can be used in the uplink, and long scrambling code is used for the downlink. The chip or frame synchronization can be accomplished using a correlator, described above, or matched filter, described in co-pending application serial nos. 09/373,703; 09/376,373; 09/525,444; 09/525,447 and 09/535,448, in a user terminal or a base station.

Figure 29 illustrates the procedures for confirming and establishing frame

75